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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/113,561	08/25/1993	THOMAS R. ADAMS	DEKM:055US	3079

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EXAMINER	
FOX, DAVID T	
ART UNIT	PAPER NUMBER
1638	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	08/113,561	ADAMS ET AL.	
	Examiner	Art Unit	
	David T. Fox	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-4 and 67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-4 and 67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Reopening Prosecution after Board Decision

In the Decision mailed 20 February 2008, the Board of Patent Appeals and Interferences reversed all of the Examiner's rejections of claims 2-4 and 67 on appeal, namely the rejections under 35 USC 112, first paragraph. The Examiner had not rejected the instant claims over prior art, given his belief that genes encoding fatty acid desaturases were not available at the time of the invention, and given his belief that there was no reasonable expectation that the genes would confer a detectable grain composition trait (see, e.g., paragraph bridging pages 2 and 3 of the Office action of 26 January 2005). However, the Board determined that such genes were indeed available, and that one of ordinary skill in the art would have reasonably expected that maize plants transformed therewith would exhibit an altered phenotype (see, e.g., the paragraph bridging pages 7 and 8 of the Decision, and the penultimate paragraph on page 12 of the Decision).

The Examiner has now discovered new references "which indicate non-patentability of any of the appealed claims" per MPEP 1214.04, and therefore prosecution is hereby reopened under 37 CFR 1.198, with the approval of Christopher Low, Acting Director of Technology Center 1600.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Indefiniteness

Claims 2-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-3 are indefinite for their dependence upon cancelled claim 68. Claim 4 is included in this rejection because it depends upon claim 3.

Obviousness

Claims 2-4 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomes et al (US Patent 6,258,999 issued 10 July 2001 and effectively filed 10 June 1988), in view of Martin et al (US Patent 5,057,419 issued 15 October 1991 and filed 22 September 1988), further in view of Thompson et al (US Patent 6,117,677 issued 12 September 2000 and effectively filed 16 March 1990).

Claim 67 is drawn to a fertile transgenic maize plant comprising a DNA composition which comprises a gene encoding a fatty acid desaturase which affects a grain composition trait, wherein the transgenic maize plant exhibits one or more phenotypic traits which distinguish it from maize plants not containing the gene, wherein the gene is transmittable through normal sexual reproduction to subsequent generations. Claims 2-4 are drawn to maize cells, progeny plants, or seeds of the plant of claim 67; all of which comprise the DNA composition comprising the gene encoding fatty acid desaturase.

The claims are accorded the filing date of the instant application, namely 25 August 1993, since this was the first application to recite fatty acid desaturase and other

enzymes involved in grain composition (see, e.g., pages 41-47 of the instant specification; in particular page 42, lines 10-28 and page 45, line 15 through page 46, line 5). Although the earliest parent application filed 17 April 1990 taught transformed maize in general, neither it nor any subsequent children contemplated improved grain composition or recited any particular enzyme involved therein. See also page 7 of the Decision of 20 February 2008, top paragraph.

Tomes et al teach and claim a particle bombardment-mediated method for the production of fertile transgenic maize plants containing a DNA composition comprising a foreign transgene of interest encoding a desirable agronomic trait and/or a selectable marker gene conferring herbicide or antibiotic resistance, including resistance to the herbicide chlorsulfuron or resistance to the antibiotics kanamycin and hygromycin, wherein the selectable herbicide or antibiotic resistance genes distinguish the transformed maize plants from plants not containing said genes, wherein herbicide resistance is itself an agronomic trait, wherein both inbreds and hybrids were transformed, wherein the maize tissue selected for bombardment/transformation was from embryogenic callus cells or suspension culture cells or was an immature embryo, and wherein the transformation of embryos or embryogenic cells results in stable transformation and the transmission of the introduced transgene to progeny plants and seed (which is inherently produced by normal sexual reproduction of fertile plants). See, e.g., column 1, lines 35-45 and 60-67; column 2, lines 1-25 and 57-67; column 3, lines 1-3; column 4, lines 37-67; column 6, line 43 through column 12, line 60. See also claims 1-40, particularly claims 1-4 and 27, where fertile transgenic maize plants

containing herbicide resistance genes and other agronomic trait genes are explicitly claimed.

Tomes et al do not teach maize transformation with a fatty acid desaturase gene.

Martin et al teach the isolation of a yeast gene encoding delta-9 fatty acid desaturase, and suggest corn (maize) transformation therewith for the production of improved oil with altered fatty acid content (see, e.g., column 2, lines 67-68; column 3, lines 1-41; column 4, lines 21-29; column 5, lines 2-8; columns 11-12, Table 2).

Thompson et al teach the isolation of a safflower gene encoding stearoyl-ACP desaturase, which is a synonym for delta-9-[fatty acid] desaturase, as well as the production of DNA compositions comprising the desaturase gene operably linked to seed-specific promoters; and suggest corn transformation therewith for the production of oils with decreased levels of saturated fatty acids for optimum human health, wherein a particle bombardment transformation method may be employed, and wherein the transformed plants may be grown to produce seed for reproduction and for the isolation of oil (see, e.g., column 1, lines 17-35; column 6, line 44 through column 8, line 9; column 8, lines 43-49; column 9, lines 16-19 and 28-30; column 14, line 25 through column 16, line 37; column 17, line 55 through column 25, line 44; and claims 1-2, 5, 13 and 22-23).

It would have been obvious to one of ordinary skill in the art to utilize the method of obtaining stably transformed fertile maize plants containing distinguishing transgenes encoding herbicide or antibiotic resistance or other desirable agronomic traits as taught by Tomes et al, and to modify that method by incorporating the delta-9 fatty acid

desaturase genes taught by either Martin et al or Thompson et al, to obtain transformed maize plants and seeds which produce oil with decreased levels of saturated fatty acids, wherein the seeds may also be used to produce progeny plants for reproduction, as suggested by each of Martin et al and Thompson et al.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Fox whose telephone number is (571) 272-0795. The examiner can normally be reached on Monday through Friday from 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 7, 2008

/David T Fox/

Primary Examiner, Art Unit 1638

/Christopher S. F. Low/
Acting Director of Technology Center 1600